

Nano size metal/Carbon material Composite Anode for Lithium Ion Battery

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The graphite particles with average size of 15 μm were used as the anode base materials for lithium ion battery. Various vitreous carbons and nano size metal particles were incorporated into the graphite by mixing and precipitation methods. The vitreous carbon-graphite composites electrode exhibited 425 mAh/g discharge capacity in the first cycle but the cycle performance was inferior to that of graphite materials. The incorporation of 5 wt.% of nano size Sn into the graphite electrode improved both the initial charge/discharge capacity and the cyclic characteristics, exhibiting 380mAh/g of discharge capacity in the first cycle. The SnO₂/graphite(80/20 wt.%) composite electrode exhibited 689 mAh/g of discharge capacity in the first cycle. However, the charge/discharge capacity decreased with increasing cycle number, showing 429 mAh/g of discharge capacity after 20 cycles.